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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/629,601	07/31/2000	Gregory E. Burns	2007.015000	4281

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EXAMINER

PHAN, RAYMOND NGAN

ART UNIT	PAPER NUMBER
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2181

DATE MAILED: 06/18/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/629,601

Applicant(s)

BURNS ET AL.

Examiner

Raymond Phan

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____ |

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Part III DETAILED ACTION

Notice to Applicant(s)

1. This application has been examined. Claims 1-25 are pending.
2. The Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 2181.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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5. Claim 1 is rejected under 35 U.S.C. § 102(e) as being anticipated by Mulvihill et al. (US No. 6,516,370).

In regard to claim 1, Mulvihill et al. disclose the data storage system comprising a backplane (see figure 2); a plurality of storage devices coupled to the backplane (see figure 2); a plurality of input/output connectors coupled to the segmented bus (i.e. SCSI bus) (see figure 2, col. 5, lines 38-65); a control board including a control logic adapted to determine an arrangement of connectors coupled to the input/output connectors and configure the segmentable bus to define a plurality of storage device arrays based on the arrangement (see col. 4, lines 40-65).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2-25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Mulvihill et al. in view of Sicola et al. (US No. 5,938,776).

In regard to claims 2, 17, Mulvihill et al. teach the claimed subject matter as discussed above except the teaching of wherein the control logic is adapted to determine the arrangement of the connector and configure the segmentable bus upon the power up of the configurable storage array. However Sicola et al. disclose the control logic is adapted to determine the arrangement of the connector and configure the segmentable bus upon the

power up of the configurable storage array (see col. 3, lines 11-67).

Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Sicola et al. within the system of Mulvihill et al. because it would prevent data corruption and parity errors due to conflict while allowing the SCSI subsystem to continue to operate.

In regard to claims 3, 18, Sicola et al. disclose wherein the control board including a switch and control logic is adapted to determine the arrangement of the connector and configure the segmentable bus upon activation of the switch (see col. 7, lines 18-51).

In regard to claims 4, 19, Sicola et al. disclose wherein the control board including a plurality of expanders (i.e. bus extender) portions on the segmentable bus (see col. 5, line 63 through col. 6, line 7).

In regard to claim 5, Sicola et al. disclose wherein the control logic is adapted to selectively activate particular ones of the expanders based on the arrangement of the connector (see col. 5, line 63 through col. 6, line 7).

In regard to claims 6, 20, Sicola et al. disclose wherein the control board is adapted to disable ones of the expander on a portion of the segmentable bus upstream of the particular connector and enable any expanders on portions of the segmentable bus downstream of the particular connector until the presence of the another connector is determined (see col. 5, line 21 through col. 6, line 34).

In regard to claims 7, 21, Sicola et al. disclose wherein the control board is adapted to enable all of the expander on a portion of the segmentable bus downstream of the particular connector in response to only one connector is identified (see col. 5, line 21 through col. 6, line 34).

In regard to claims 8, 22, Sicola et al. disclose the plurality of expanders coupled between the segmentable bus and the input/output connector (see figure 3B).

In regard to claim 9, even though the teachings of Sicola et al. or Mulvihill et al. do not specifically disclose storage device is a tape drives, however one skilled in the art would have understood that they can choose to have different type of drive for the storages to fulfill their need.

In regard to claim 10, even though the teachings of Sicola et al. or Mulvihill et al. do not specifically disclose storage device is a hard disk drives, however one skilled in the art would have understood that they can choose to have different type of drive for the storages to fulfill their need.

In regard to claim 11, even though the teachings of Sicola et al. or Mulvihill et al. do not specifically disclose storage device is a hot plug, however one skilled in the art would have understood that they can choose to have different type of drive for the storages to fulfill their need.

In regard to claims 12, 23, Sicola et al. disclose wherein the control logic is adapted to determined the arrangement of connectors by monitoring the voltage state of the particular line of the input/output connectors (see col. 7, line 40 through col. 8, line 19).

In regard to claims 13, 24, Sicola et al. disclose the plurality of switches associated with the input/output connector, wherein the first subset of switches is enable and second subset of switches is disable (see col. 7, line 53 through col. 8, line 51).

In regard to claim 14, Sicola et al. disclose wherein the segmentable bus is a SCSI bus (see col. 5, line 2-5).

In regard to claims 15, 25, Mulvihill et al. disclose the data storage system comprising a backplane (see figure 2); a plurality of storage devices coupled to the backplane (see figure 2); a plurality of input/output connectors coupled to the segmented bus (i.e. SCSI bus) (see figure 2, col. 5, lines 38-65); a control board including a control logic adapted to determine an arrangement of connectors coupled to the input/output connectors and configure the segmentable bus to define a plurality of storage device arrays based on the arrangement (see col. 4, lines 40-65). But Mulvihill et al. do not specifically disclose the grouping subset of the storage devices onto isolated bus segmentable bus in the storage array based on the arrangement of the connectors. However Sicola et al. disclose the grouping subset of the storage devices onto isolated bus segmentable bus in the storage array based on the arrangement of the connectors (see col. 7, line 17 through col. 8, line 19). Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Sicola et al. within the system of Mulvihill et al. because it would prevent data corruption and parity errors due to conflict while allowing the SCSI subsystem to continue to operate.

In regard to claim 16, Sicola et al. disclose wherein the storage array including a bus coupled to the storage devices, and grouping the subsets comprising a segmentable bus to defined the isolated bus segments (see col. 3, lines 22-53).

Conclusion

8. All claims are rejected.
9. The prior arts made of record and not relied upon are considered pertinent to applicant's disclosure.

Larson et al. (US No. 5,548,712) disclose a data storage system and method for managing asynchronous attachment and detachment of storage disks.

Dulac et al. (US No. 5,257,391) disclose a disk controller having host interface and bus switches for selecting buffer and drive buses respectively based on the configuration control signals.

Tuccio et al. (US No. 6,230,217) disclose a data storage system having a host computer coupled to bank of disk drives through interface comprising plurality of directors, buses and a PCB connectors.

Patti et al. (US No. 6,469,945) disclose a dynamically configured storage array with improved data access.

Tuccio (US No. 5,819,104) discloses a disk array memory system having a bus repeater at disk backplane.

Raz (US No. 6,311,252) discloses a method and apparatus for moving data between storage levels of a hierarchically arranged data storage system.

Parrett (US No. 5,586,271) discloses an in-line SCSI bus circuit for providing isolation and bi-directional communications between two portions of the SCSI bus.

Fischer et al. (EPO No. 0 674 274 A1) disclose a backplane unit isolation system.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Raymond Phan, whose telephone number is (703) 306-2756. The examiner can normally be reached on Monday-Friday from 6:30AM- 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Primary, Paul Myers can be reached on (703) 305-9656 or via e-mail addressed to paul.myers@uspto.gov. The fax phone number for this Group is (703) 746-7239.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [raymond.phan@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.



Raymond Phan
6/13/03



PAUL R. MYERS
PRIMARY EXAMINER